

[Extracts from the Proceedings of the Academy of Natural Sciences of Philadelphia, of papers, by ISAAC LEA. Read April 1st, 1856.]

Mr. Lea read some notes from a paper he is preparing for the Journal of the Academy on the New Red Sandstone Formation of Pennsylvania, and stated that he had, during an excursion last summer, found in the dark shales of that Formation, near Phoenixville, on the Schuylkill, the tooth of a Sauroid Reptile, which he thus characterised.

CENTEMODON* SULCATUS. Tooth smooth, rather thick, slightly curved, with trenchant edges, rounded on the exterior portion, sulcate on the lower part near the base, covered with very minute distinct striæ from the point to the base, which striæ cross the sulcations in slightly oblique lines. Length sixteen-twentieths of an inch, greatest breadth four twentieths of an inch; pulp cavity large.

On comparing this tooth with *Clepsysaurus Pennsylvanicus*, which he had described from the same Red Sandstone Formation in Lehigh county, it will be found to differ very widely. The edge is not serrate on any part like that genus, nor is it so large or so attenuate. The form, too, is more compressed. It differs from the teeth of *Bathygnathus borealis*, Leidy, from the New Red Sandstone of Nova Scotia, in size, being smaller and being more attenuate, as well as in having a trenchant smooth edge and not a serrate edge. It is about the size and approaches the form of Prof. Owen's figure of *Labyrinthodon*, plate 63, A. f. 2, of *Odontograpia*, but it is more flattened.

Mr. Lea also stated that in the greenish and blackish shales of the same locality he found two species of *Posidonia*, which genus is so characteristic of this portion of the formation and existing in immense quantities. As they seem to differ from that figured by Sir Charles Lyell, in his *Elementary Geology*, as coming from the Oolitic coal shale of Richmond, Virginia, Mr. Lea proposed the names of *P. ovata* and *P. parva*, the first being about seven-twentieths of an inch in transverse diameter. The latter is more rotund, and about three-twentieths of an inch in transverse diameter, both being covered with numerous minute concentric costæ over the whole disc.

Near to this locality and superimposed, Mr. Lea obtained a specimen of impure dull red limestone, which contained, on a partially decomposed surface, impressions presenting the appearance of *Foot-marks*, somewhat like *Chelichnus Duncani*, Owen, figured by Sir Wm. Jardine in his *Ichnology*, for which Mr. Lea proposed the provisional name of *Chelichnus Wymanianus*, after Professor Wyman, of Cambridge, Mass.

From the same formation and locality were procured the impressions of plants,

* *Κέντημα* aculeus and *ἰδρυς* dens.

some of which belong to the *Conifera*. One of the cones was nearly six inches long and full an inch wide. These were accompanied by other plants of very obscure character, covering large portions of the surface of some of the layers. Mr. Lea also mentioned that he had observed the same Red, Black and Gray Shales at Gwynedd, on the North Pennsylvania Railroad, where he found the same *Posidonia*, and some of the same obscure plants, impressions of which covered the surfaces of many of the rocks. A single specimen was obtained of a plant with long leaves somewhat resembling *Noeggerathia cuneifolia*, Brogniart, which is from the Permian.

In the Black *Posidonia* Shales was found a single Ganoid scale, which is more like *Pygopterus mandibularis*, Agas., from the Marl Slate (Lower Permian) than any other which had come under Mr. Lea's notice. There were other obscure forms observed, which have not yet been satisfactorily found to be analogous to any known forms, but which Mr. Lea hoped to be able to make out when he should figure all the specimens and describe them more at large for the Journal of the Academy.

Description of a New Sub-Genus of NAIADES.

By ISAAC LEA.

Family NAIADES.

Sub-genus PLAGIODON.*

Testa æquivalvis, inæquilatera, obliquè trigona, valdè inflata; dentibus cardinalibus crenulatis, compressis, transversis, curtis, in utraqùè valva duplicis; dentibus lateralibus nullius; ligamentum vix extrorsum; impressio muscularis antica composita.

This sub-genus is proposed for a fluviatile shell, which is nearer to *Monocondylæa*, D'Orbigny, than to *Margaritana*, Schumacher; and may be considered properly so interposed as a link to connect them.

PLAGIODON ISOCARDIODES.

Testâ lævi, rotundo-trigonâ, globosâ, ventricosissimâ, ad lateris planulatis, valdè iniquilaterali, anticè brevissimâ, umbonibus tumidis, valvulis subtenuibus; natibus valdè elevatis, incurvis, terminalis; epidermide subrugosâ, tenebroso-olivaceâ; dentibus cardinalibus crenulatis, compressis, transversis, curtis, in utraqùè valvâ duplicis; margaritâ albâ et iridescente.

Hab. Rio Plata. Mr. E. Verreau, Paris.

* Πλάγιος, transversus and ἴσος, dens.

Description of a New Species of TRIQUETRA, Klein (HYRIA, Lamarck.)

By ISAAC LEA.

TRIQUETRA LANCEOLATA.

Testâ lævi, transversissimâ, subcompressâ, lanceolatâ, valdè inequaliterali, posticè acuto-angulatâ: anticè caudatim producta; valvulis crassis; natibus parvis, prominulis, ad quartam anteriorem partem positis; epidermide striatâ, tenebroso-fuscâ; dentibus cardinalibus subgrandibus crenulatisque; lateralibus prælongis rectisque; margaritâ albâ et argenteâ.

Hab. China? Mr. Asa Fitch.

Description of New Fresh water Shells from California.

By ISAAC LEA.

Family LYMNÆANA.

Genus POMPHOLYX.

Testa rotundo-gibbosa, subtus retrorsa, superne planulata, non umbilicata; spira depressa, apertura amplissima, subrotunda, effusa; labro acuto; labio incrassato, planulato; operculum nullum.

POMPHOLYX EFFUSA. Testâ parvâ, striatâ, rotundo-gibbosâ, subtenui, effusâ, luteo-corneâ; anfractibus trinis, supernè planulatis, infernè convexis; aperturâ subrotundâ, dilatâ, intus albidâ, maculatâ.

Hab. Sacramento River, California. Dr. Trask.

MELANIA SHASTAENSIS. Testâ striatâ, subcylindraceâ, subtenui, tenebroso-corneâ, fasciatâ; spirâ elevatâ ad apice plicatâ; suturis valdè impressis; anfractibus convexis; aperturâ parvâ, ovatâ, intus albidâ; columellâ lævi, incurvatâ et recurvatâ.

Hab. Shasta and Scott Rivers, California. Dr. Trask.

MELANIA NIGRINA. Testâ lævi, parvâ, conicâ, subtenui, nigricanti, politâ; spirâ subelevatâ; suturis impressis; anfractibus regulariter convexis; aperturâ parvâ, ovatâ, supernè angulatâ, intus tenebroso-purpureâ; columellâ incurvâ, purpureâ.

Hab. Clear Creek, Shasta County, California. Dr. Trask.

PHYSA TRITICEA. Testâ subfusiformi, pellucidâ, politâ, rufo-castaneâ; spirâ brevi, subacutâ; suturis subimpressis; anfractibus quaternis, subconstrictis; aperturâ elongatâ, intus lineatâ.

Hab. Shasta County, California. Dr. Trask.

PLANORBIS TRASKII. Testâ magnâ, tenebroso-corneâ, subcylindraceâ, minutè, crebrè et regulariter striatâ, supernè latè et profunditer umbilicatâ; infernè

magis excavatâ; anfractibus quinis, supernè acutè carinatâ ad peripheriam, infernè obtusè carinatâ; aperturâ auriculæformi.

Hab. Kern Lake, Tulan County, California. Dr. Trask.

LYMNÆA PROXIMA. Testâ acuto-conicâ, subtenui, crebrè et irregulariter striatâ, cornèâ, minutè perforatâ; spirâ subelevatâ, ad apicem acuminatâ; suturis valde impressis; anfractibus septenis, convexis; aperturâ subinflatâ, subellipticâ, intus fasciatâ, columellâ paulo plicatâ.

Hab. Arroya San Antonio, California. Dr. Trask.

ANCYLUS PATELLOIDES. Testâ magnâ, crassâ, ellipticâ, maculatâ, obliquè conicâ; striis crebris, minutis; apice submediali.

Hab. Sacramento River, California. Dr. Trask.

The following species, heretofore described, were part of the "envoi" made by Dr. Trask.

Margaritana margaritifera, Lea.

Alas. falcata, Gould.

Alas. Yubænsis, Trask.

From Klamath and Yuba Rivers.

I received specimens of this shell from Prof. Nuttall in 1837, brought by him from Columbia River. I thought then, and I still think, there were not characters sufficiently distinct in them to form a new species. The observations published at the time (Tran. Am. Phil. Soc. v. 6, p. 97) are still in accordance with my opinions, after having had many specimens from various localities under examination. The purple in the nacre is stronger than any I have seen from other localities, but this with the other differences would not I think warrant its being considered more than a mere variety of *M. margaritifera*.

Anodonta Wahlamatensis, Lea. Tr. Am. P. S. v. 6, p. 78. = *A. triangulata*, Trask, *A. rotundovata*, Trask. From Sacramento River.

Anodonta angulata, Lea. Tr. Am. P. S. v. 6, p. 97. = *A. feminalis*, Gould, *A. Randalli*, Trask. From upper San Joaquin.

Helix Oregonensis, Lea. Trans. Am. P. S. v. 6, p. 100. Point Cypress, Monterey County.

Helix Nickliniana, Lea. Trans. Am. P. S. v. 6, p. 100. Tomales Bay and Deadman's Island.

Helix Californiensis, Lea. Trans. Am. P. S. v. 6, p. 99. Point Cypress, Monterey County.

Lymnæa exigua, Lea. Trans. Am. P. S. v. 9, obs. v. 3. San Antonio Arroya.

Lymnæa pallida, Adams. Journal Boston Nat. Hist. Soc. v. 3. San Antonio Arroya.

Physa heterostrophæ, Say. Nicholson's Ency. Am. Edition. Los Angeles.

Melania occata, Hinds. Voy. of the Sulphur, pl. 15, f. 5. Sacramento River.

Melania seminalis, (*Paludina*, Hinds.) Voy. Sulphur, pl. 16, fig. 22. Sacramento River.

Planorbis trivolis, Say. Nicholson's Ency. Am. Ed. Hern Lake. Slightly varies from the Michigan specimens.

Planorbis ammon, Gould. Proc. Boston Soc. Nat. Hist. v. 5, p. 129. Lagoons, Sacramento Valley.

Description of Twenty-five New Species of Exotic UNIONES.

By ISAAC LEA.

[Read April 15th, 1856.]

UNIO HAINESIANUS. Testâ alatâ, lævi, subrotundatâ, subinflatâ, valdè inæquilaterali, valvulis crassis; natibus prominentibus, angulatis; epidermide luteo-fuscâ; dentibus cardinalibus crassis, crenulatis elevatisque; lateralibus longis, crassis subcurvisque; margaritâ albâ et iridescente.

Hab. Siam. S. R. House, M. D.

UNIO MYERSIANUS. Testâ bialatâ, lævi, triangulari, subcompressâ, inequilaterali, posticè angulatâ; valvulis crassis; natibus prominulis epidermide tenebroso-fuscâ; dentibus cardinalibus longis crenulatisque; lateralibus prælongis, lamellatis subcurvisque; margaritâ colore salmonis tinctâ.

Hab. Siam. S. R. House, M. D.

UNIO HOUSEI. Testâ bialatâ, lævi, triangulari, compressâ, valdè inæquilaterali, posticè obtusè angulatâ, valvulis subcrassis; natibus prominulis; epidermide fuscâ; dentibus cardinalibus lamellatis; lateralibus prælongis, lamellatis subcurvisque; margaritâ colore salmonis tinctâ.

Hab. Siam. S. R. House, M. D.

UNIO GRAVIDUS. Testâ alatâ, lævi, triangulari, valdè inflatâ, valdè inæquilaterali; valvulis tenuibus; natibus elevatis, tumidis; epidermide luteâ, nitidâ; dentibus cardinalibus prælongis, valdè lamellatis; lateralibus longis, lamellatis subcurvisque; margaritâ cæruleo-albâ et iridescente.

Hab. Siam. S. R. House, M. D.

UNIO INORNATUS. Testâ lævi, ellipticâ, inflatâ, subæquilaterali, posticè subangulatâ; valvulis subpellucidis tenuibusque; natibus subprominentibus; epidermide olivaceâ, substriatâ; dentibus cardinalibus longis lamellatisque; lateralibus longis rectis lamellatisque; margaritâ cæruleo-albâ et iridescente.

Hab. Siam. S. R. House, M. D.

UNIO LUTENS. Testâ lævi, ellipticâ, inflatâ, subæquilaterali, posticè obtusè angulatâ; valvulis crassis; natibus subprominentibus; epidermide luteâ, politâ;

dentibus cardinalibus crassis brevisque; lateralibus brevis, subcrassis subrectisque; margaritâ albâ et iridescente.

Hab. Newville Burmah. Mrs. Vinton.

UNIO EXIMIUS. Testâ alatâ, plicatâ, obovatâ, compressâ, valdè inæquilaterali, posticè rotundatâ; valvulis tenuissimis; natibus prominulis; epidermidè virido-luteâ, obsoletè radiatâ; dentibus cardinalibus lamellatis tenuibusque; lateralibus longis, lamellatis subcurvisque; margaritâ cæruleo-albâ et iridescente.

Hab. Siam. S. R. House, M. D.

UNIO TUMIDULUS. Testâ lævi, obliquâ, inflatâ, posticè angulatâ, valdè inæquilaterali; valvulis subcrassis; natibus prominentibus; epidermidè tenebroso-olivaceâ, striatâ; dentibus cardinalibus longis lamellatisque; lateralibus prælongis subcurvisque; margaritâ albâ et iridescente.

Hab. Siam. S. R. House, M. D.

UNIO RUSTICUS. Testâ tuberculatâ, ellipticâ, inflatâ, inæquilaterali, posticè subangulatâ; valvulis subcrassis; natibus subprominentibus; epidermidè olivaceâ, substriatâ; dentibus cardinalibus longis lamellatisque; lateralibus longis, lamellatis subrectisque; margaritâ albâ et iridescente.

Hab. Siam. S. R. House, M. D.

UNIO SAGITTARIUS. Testâ lævi, valdè transversâ, valdè inæquilaterali, subinflatâ, subcylindraceâ, posticè acuto-angulatâ; valvulis subtenuibus; natibus vix prominentibus; epidermidè virido-olivaceâ, striatâ; dentibus cardinalibus longis, rectis lamellatisque; lateralibus prælongis subrectisque; margaritâ albâ et iridescente.

Hab. Siam. S. R. House, M. D.

UNIO SUBSTRIATUS. Testâ lævi, ellipticâ, subinflatâ, subæquilaterali; posticè angulatâ, anticè rotundatâ; valvulis crassiusculis; natibus subprominentibus granulatisque; epidermidè olivaceâ, eradiatâ et rugoso-striatâ; dentibus cardinalibus longis, rectis lamellatisque; lateralibus longis, rectis lamellatisque; margaritâ argenteâ et iridescente.

Hab. Siam. S. R. House, M. D.

UNIO SCOBINATUS. Testâ plicatâ, transversâ, in medio compressâ, valdè inæquilaterali, posticè angulatâ, ad basim emarginatâ; valvulis subcrassis; natibus parvis, prominulis, ad apicem undulatis; epidermidè viridi et luteâ, minutè striatâ; dentibus cardinalibus obliquis, compressis; lateralibus prælongis, in uterque valvis duplicis subrectisque; margaritâ albâ et iridescente.

Hab. Siam. T. R. Ingalls, M. D., S. R. House, M. D.

UNIO HUMILIS. Testâ plicatâ, transversâ, subinflatâ, subæquilaterali, subcylindraceâ, posticè biangulatâ; valvulis tenuibus, pellucidis; natibus prominulis, perplicatis; epidermidè virido-luteâ, striatâ; dentibus cardinalibus lamellatis

rectisque; lateralibus longis lamellatisque; margaritâ cæruleo-albâ et iridescente.

Hab. Siam. S. R. House, M. D.

UNIO PHASELUS. Testâ plicatâ, transversâ, inflatâ, subemarginatâ, valdè inæquilaterali, posticè obtusè angulatâ; valvulis crassis; natibus parvis, prominulis, ad apicem undulatis; epidermide viridi et luteâ, politâ; dentibus cardinalibus brevis subcrassisque; lateralibus prelongis, duplicis in uterque valvis subcurvisque; margaritâ albâ et iridescente.

Hab. Siam. S. R. House, M. D.

UNIO VERREAUIANUS. Testâ sulcatâ, oblongâ, inflatâ, subemarginatâ, subæquilaterali, posticè obtusè angulatâ; valvulis crassis; natibus parvis, subprominentibus undulatisque; epidermidè luteo-bruneâ, striatâ; dentibus cardinalibus magnis, obliquis, compressis crenulatisque; lateralibus longis, rectis lamellatisque; margaritâ salmonis colore tinctâ et iridescente.

Hab. Cape of Good Hope. Mr. E. Verrean.

UNIO AFRICANUS. Testâ lævi, ellipticâ, subcompressâ, subemarginatâ, valdè inæquilaterali, posticè obtusè angulatâ; valvulis subtenuibus; natibus parvis, prominulis undulatisque; epidermide luteo-olivaceâ et politâ; dentibus cardinalibus parvis, obliquis, compressis sublamellatisque; lateralibus prælongis subrectisque; margaritâ salmonis colore tinctâ et valdè iridescente.

Hab. Cape of Good Hope. Mr. E. Verrean.

UNIO SHURTLEFFIANUS. Testâ minutè plicatâ, ellipticâ, inæquilaterali, subcylindraceâ, posticè obtusè angulatâ, anticè rotundatâ, ad latus subplanulatâ; valvulis subcrassis; natibus prominulis, ad apices minutè undulatis; epidermide virido-luteâ; dentibus cardinalibus sublongis, compressis geminisque; lateralibus longis subrectisque; margaritâ salmonis colore tinctâ et iridescente.

Hab. Sina River, India, Major Le Conte. Ahmednugger, India. S. Shurtleff, M. D.

UNIO EFFULGENS. Testâ sulcatâ, ellipticâ, subinflatâ, inæquilaterali, posticè obtusè angulatâ; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fuscâ, politâ; dentibus cardinalibus parvis crenulatisque; lateralibus longis curvisque; margaritâ cæruleo-albâ.

Hab. Brazil. B. W. Budd, M. D.

UNIO DUNKERIANUS. Testâ plicatâ, transversâ, subinflatâ, valdè inæquilaterali, posticè obtusè angulatâ; valvulis subtenuibus; natibus prominulis, costis divarioatis; epidermide tenebroso-fuscâ politâque; dentibus cardinalibus longis compressisque; lateralibus prælongis, lamellatis rectisque; margaritâ cæruleo-albâ et valdè iridescente.

Hab. River Macacoú, Rio de Janeiro, Brazil, Prof. Dünker. New Grenada, Mr. E. Verrean.

UNIO SHUTTLEWORTHII. Testâ sulcatâ, oblongâ, transversâ, valdè inæquilaterali, subcompressâ, posticè obtusè biangulatâ, ad latus planulatâ; valvulis subcrassis; natibus prominulis; epidermide bruneo-nigricante; dentibus cardinalibus parvis; lateralibus longis subcurvisque; margaritâ purpureâ et iridescente.

Hab. Australia. R. J. Shuttleworth, Esq. Berne, Switzerland.

UNIO NUCLEUS. Testâ plicatâ, quadratâ, inflatâ, subæquilaterali, posticè angulatâ; valvulis crassis; natibus prominentibus, perplicatis; epidermide virido-fuscâ, minutissimè perstriatâ; dentibus cardinalibus crassis brevisque; lateralibus crassis, brevis, duplicis in uterque valvis subcurvisque; margaritâ cæruleo-albâ et iridescente.

Hab. Siam. S. R. House, M. D.

UNIO WHEATLEYANUS. Testâ lævi, ellipticâ, inflatâ, inæquilaterali; valvulis crassis; natibus prominulis, costis elevatis, epidermide tenebroso-olivâ, rugoso-striatâ; dentibus cardinalibus magnis, crassiusculis, subdivisis; lateralibus longis crassisque; margaritâ vel albâ vel carneâ et iridescente.

Hab. Rio Plata, M. A. D'Orbigny. Rio Negro. C. M. Wheatley, Esq.

UNIO BROWNI. Testâ lævi, obovatâ, valdè compressâ, valde inæquilaterali; valvulis subcrassis; natibus prominulis, costis divaricatis; epidermide tenebroso-viridi, striatâ; dentibus cardinalibus submagnis, in utraque valvis duplicis; lateralibus lamellatis, sublongis curvisque; margaritâ albâ.

Hab. Mocha? Asia. Capt. George Brown.

UNIO SUAVIDICUS. Testâ lævi, oblongâ, subcompressâ, valdè inæquilaterali, anticè rotundatâ, posticè truncatâ, natibus subprominentibus, costis elevatis; epidermide luteo-olivâ, minutè striatâ; dentibus cardinalibus parvis, compressis, crenulatis, in utraque valvis duplicis, lateralibus longis, lamellatis subrectisque; margaritâ cæruleo-albâ et iridescente.

Hab. River Amazon. Mr. E. Verreau, Paris.

UNIO UMBROSUS. Testâ lævi, ellipticâ, subinflatâ, inæquilaterali; valvulis subcrassis; natibus prominulis; epidermide castaneâ, politâ, transversè fasciatâ; dentibus cardinalibus magnis, subelevatis; lateralibus longis, lamellatis subcurvisque; margaritâ vel purpureâ vel roseâ et iridescente.

Hab. Medellin River, Mexico. M. Burrough, M. D.